Complimentary

FINAL CLEANUP REPORT FOR UST CLOSURE

WHITE SHIELD, INC.

Engineering △ Surveying △ Environmental △ Planning

FINAL CLEANUP REPORT FOR UST CLOSURE

Site Location:
5661 Branch Road
Wapato, WA

WSI Job No. 101-034-01

Prepared For:
Mr. Greg Keys
Pace International
5661 Branch Road
Wapato, WA 98951

Prepared By:

White Shield Inc.
2515 W. Falls Avenue
Kennewick, WA 99336
(509) 734-0789

February 8, 2002

WHITE SHIELD, INC.

February 8, 2002

Mr. Greg Keyes
Pace International
5661 Branch Road
Wapato, WA 98951

RE: Final Cleanup Report for UST Closure
Pace International
5661 Branch Road; Wapato, Washington

Dear Mr. Keyes:

White Shield, Inc. (WSI) conducted soil sampling activities at the above referenced site on January 8, 2002. The site is identified as Yakima County Parcel 191130-33003 as shown on the Yakima County GIS Web Mapping document, which is presented as Figure 1- Site Location Map. This letter report discusses the past and current site status, and soil sampling activities and analysis.

Prior Site Status

During the decommissioning and removal of one diesel underground storage tank (UST) and one bunker C or #6 fuel UST in June 1991, petroleum hydrocarbon contaminated soil (PCS) was encountered. Refer to the *White Shield Site Assessment Report for Underground Storage Tank Closure at Sanofi Bio-Industries Wapato, WA* dated June, 1991. The PCS was excavated and moved to a location located north of the enclosure fence, where the soil was spread on the ground at a depth of 6 inches to 12 inches for the purpose of soil remediation and monitoring.

WSI requested Materials Testing & Consulting, Inc (MTC) Analytical/Environmental Services to analyze each sample submitted for diesel and heavy oils using methods EPA 418.1 and 8015.

Current Site Status

WSI examined current site maps and aerial photos. Appendix 1 presents a 1992 aerial photograph provided by Yakima County GIS Department. WSI determined that the PCS had been spread over an area approximately 175 feet x 150 feet at a depth of 6 inches to 12 inches. The documents reviewed indicated that the remediation area is located approximately 725 feet north of Branch Road and 900 feet east of Lateral B Road. A visual observation of area revealed evidence that soil had been spread over the ground and that it had been cultivated at least once during the period from 1991 to the present.

2515 W. Falls Avenue, Kennewick, WA 99336 **Phone (509) 734-0789 Fax (509) 734-0878**

On January 8, 2002, WSI designed a sampling grid consisting of eight contiguous blocks measuring approximately 44 feet by 75 feet. Refer to Figure 2 - Sampling Plan. WSI collected a composite soil sample at a depth of 12 inches below ground surface (bgs) from 5 randomly selected locations within each block (Samples 101-034-01 thru 101-034-08). In addition, soil sample 101-034-09 was collected from a control block located outside of the designated sampling grid.

The samples were submitted to OnSite Environmental Inc Analytical Laboratory for analysis for diesel and heavy oils using method NWTPH-Dx. Appendix 2 presents the laboratory results from OnSite Laboratory. The results are summarized in Table 1 below.

Table 1 Soil Analytical Results

Sample Number	Sample Date	Depth (in)	Diesel (ppm)	Heavy Oil (ppm)	Location	Type
101-034-01	1/8/02	12	ND	**120**	Block 1	Composite
101-034-02	1/8/02	12	ND	**60**	Block 2	Composite
101-034-03	1/8/02	12	ND	ND	Block 3	Composite
101-034-04	1/8/02	12	ND	ND	Block 4	Composite
101-034-05	1/8/02	12	ND	**590**	Block 5	Composite
101-034-06	1/8/02	12	ND	**610**	Block 6	Composite
101-034-07	1/8/02	12	ND	ND	Block 7	Composite
101-034-08	1/8/02	12	ND	ND	Block 8	Composite
101-034-09	1/8/02	12	ND	ND	Control	Composite
101-034-10	1/22/02	30	ND	**210**	Block 6	Unique
101-034-11	1/22/02	30	ND	ND	SE Corner Block 9	Unique
101-034-12	1/22/02	30	ND	ND	NE Corner Block 9	Unique
MTCA Cleanup Levels			2000	2000		

The current Washington State Department of Ecology Model Toxics Control Act cleanup level, as well as the United States Environmental Protection Agency (USEPA), is 2000 parts per million (ppm) for both diesel and heavy oils.

Because the analysis of the three composite samples collected from Blocks 1, 5 and 6 had elevated levels of heavy oils, WSI hand excavated pit at a depth 30 inches bgs near the center of Block 6 and collected an additional sample (101-034-10) from the bottom. During the excavation, WSI observed a layer of dark colored soil extending from the ground surface to a depth of approximately 12 inches. The soil at a depth of 12" to 30" bgs had no visible discoloration or detectable odor. According to Mike Sheppard of the USEPA the groundwater gradient at the site has been determined to flow in a southeasterly direction. Therefore WSI collected two samples from Block 9 located southeast of the remediation area in order to determine if landfarming the PCS may have resulted in hydrocarbons leaching downward into the groundwater. Sample 101-034-11 was collected at a depth of 30" bgs at the SW corner of Block 9, and Sample 101-034-12, at the NE corner.

According to the *USDA Soil Conservation Service Soil Survey of the Yakima Indian Reservation Irrigated Area*, dated January 1976, the soil is classified as an Ashue (AsA) gravelly sandy clay loam. The soil survey further says that no water table was evident at the depth of observation, normally 5 feet.

Conclusions

Based upon the fact that the soil analytical results indicate that the concentrations of both diesel and heavy oil on all of the samples collected at depths of 12" and 30" bgs are below the cleanup level of 2000 ppm., White Shield concludes that there is no additional action is necessary at the site. The soil analytical results indicate no PCS at the southeasterly corner of the area. White Shield further concludes that there as been no significant migration of the petroleum hydrocarbons the eleven-year duration of the project; therefore, the low levels of petroleum hydrocarbons present no threat to the environment. White Shield, therefore, concludes that no additional action is needed at the site. At the request of Mike Shepherd a copy of the 1991 report is attached as Appendix 3.

WSI appreciates the opportunity to provide you with environmental services. Please do not hesitate to contact us with any questions or concerns on this matter.

Sincerely,
White Shield, Inc.

Charles Robinson
Environmental Technician

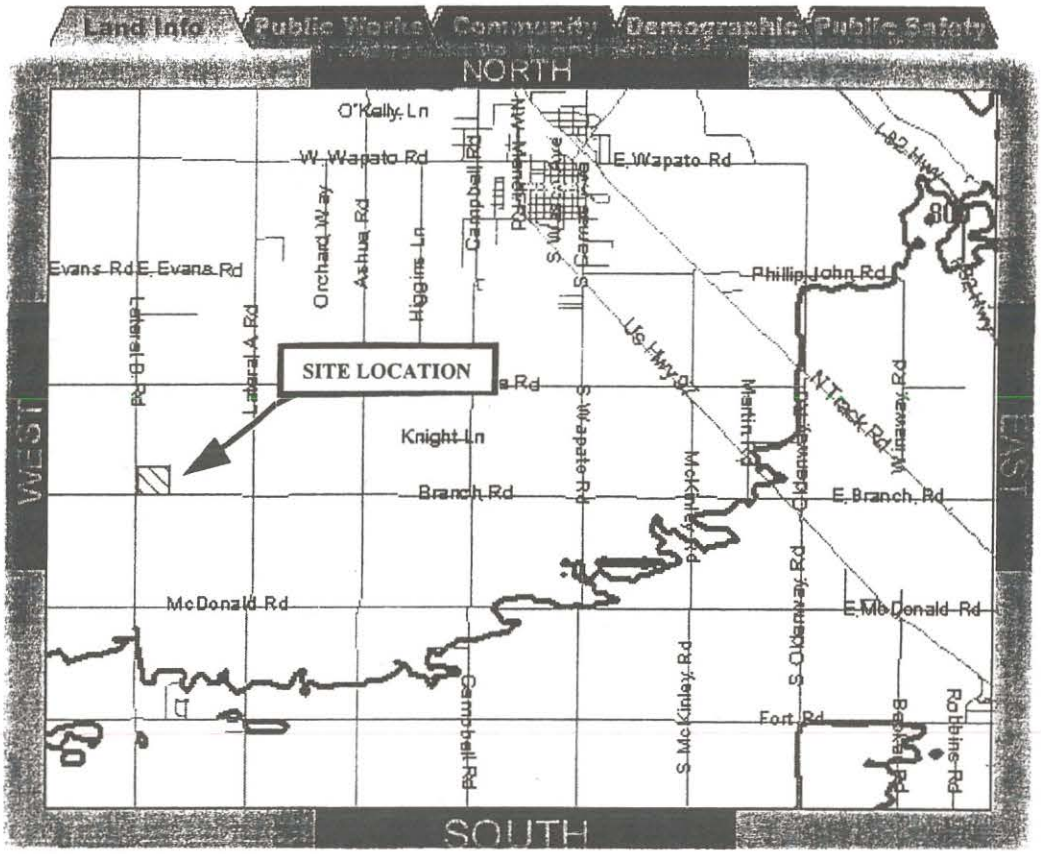
William D. Gowey
Environmental Division Manager

cc: Yen-vy Van
Hydrogeologist

Attachments:

Figure 1 - Site Location Map
Figure 2 - Sampling Plan
Appendix 1 – 1992 Aerial Photo
Appendix 2 – Laboratory Analytical Results
Appendix 3 – Site Assessment Report for Underground Storage Tank Closure at Sanofi Bio-Industries Wapato, WA July 1991

FIGURE 1 – Site Location Map
5661 Branch Road
Wapato, Washington



Parcel Number: 19113033003
Situs Address: 5661 Branch Rd
Owner Name: Wapato Associates LLC
Misc Codes: 562-TCA/Levy
Assessed Values: 2131000-improvement value 143500-land
Parcel Size: 46.20 Acre(s)
Yakima County Zoning: AG - Agriculture
Plan 2015: Agricultural Resource
Urban Growth Area: Outside of Urban Growth Area
Jurisdiction: County
Floodplain: Not within floodplain.
Critical Areas:

FIGURE 2 – Sampling Plan
5661 Branch Road
Wapato, Washington

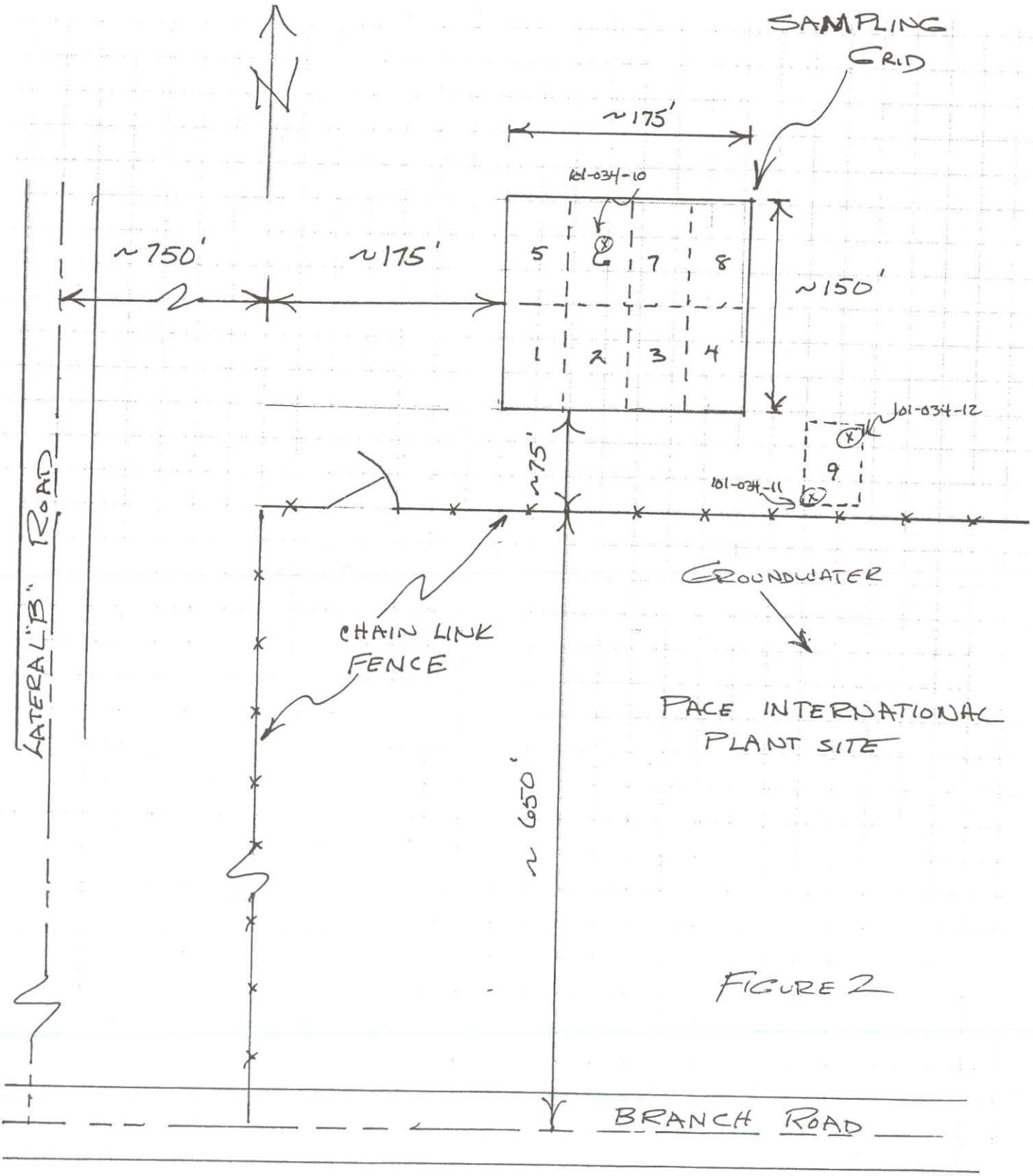
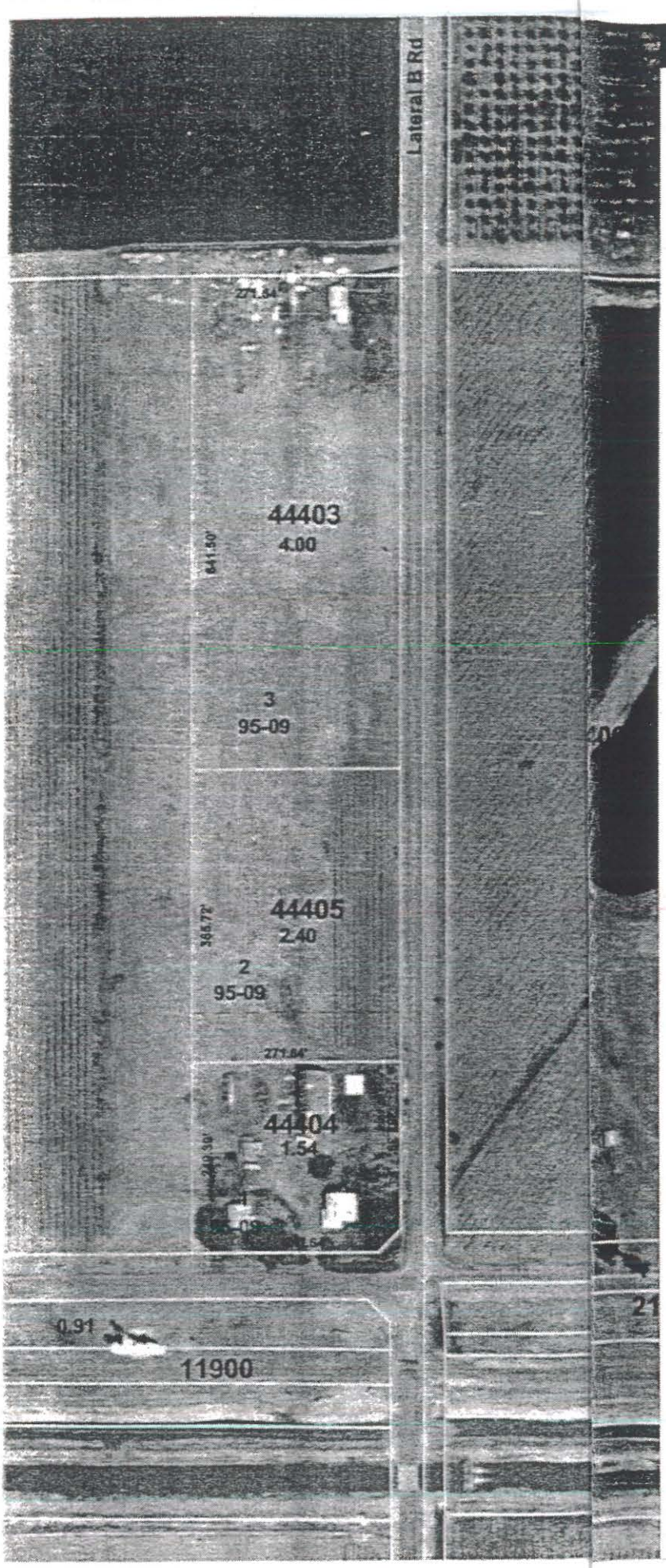


FIGURE 2

APPENDIX 1

1992 AERIAL PHOTO



YAKIMA COUNTY

GEOGRAPHIC INFORMATION SERVICES

1992 - 18in OrthoPhotos

0 100 200 300 400 Feet

1"= 200 feet

Yakima County GIS

N

S

Plot date: Dec 10, 2001; mj

APPENDIX 2

LABORATORY ANALYTICAL RESULTS

OnSite Environmental Inc.
Analytical Testing and Mobile Laboratory Services

January 11, 2002

Bill Gowey
White Shield, Inc.
2515 W. Falls Avenue
Kennewick, WA 99336

Re: Analytical Data for Project 101-034-01
Laboratory Reference No. 0201-038

Dear Bill:

Enclosed are the analytical results and associated quality control data for samples submitted on January 9, 2002.

The standard policy of OnSite Environmental Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister
Project Manager

Enclosures

Date of Report: January 11, 2002
Samples Submitted: January 9, 2002
Lab Traveler: 01-038
Project: 101-034-01

NWTPH-Dx

Date Extracted:	1-9-02
Date Analyzed:	1-9-02
Matrix:	Soil
Units:	mg/Kg (ppm)

Client ID:	101-034-01	101-034-02	101-034-03
Lab ID:	01-038-01	01-038-02	01-038-03
Diesel Fuel:	ND	ND	ND
PQL:	39	30	30
Heavy Oil:	120	ND	ND
PQL:	78	60	61
Surrogate Recovery:			
o-Terphenyl	86%	87%	92%

Flags:

Date of Report: January 11, 2002
Samples Submitted: January 9, 2002
Lab Traveler: 01-038
Project: 101-034-01

NWTPH-Dx

Date Extracted:	1-9-02
Date Analyzed:	1-9&10-02
Matrix:	Soil
Units:	mg/Kg (ppm)

Client ID:	101-034-04	101-034-05	101-034-06
Lab ID:	01-038-04	01-038-05	01-038-06
Diesel Fuel:	ND	ND	ND
PQL:	30	38	34
Heavy Oil:	ND	590	610
PQL:	60	77	68
Surrogate Recovery:			
o-Terphenyl	82%	92%	95%

Flags:

Date of Report: January 11, 2002
Samples Submitted: January 9, 2002
Lab Traveler: 01-038
Project: 101-034-01

NWTPH-Dx

Date Extracted:	1-9-02
Date Analyzed:	1-9-02
Matrix:	Soil
Units:	mg/Kg (ppm)

Client ID:	101-034-07	101-034-08	101-034-09
Lab ID:	01-038-07	01-038-08	01-038-09
Diesel Fuel:	ND	ND	ND
PQL:	30	30	30
Heavy Oil:	ND	ND	ND
PQL:	60	61	61
Surrogate Recovery:			
o-Terphenyl	89%	83%	85%

Flags:

Date of Report: January 11, 2002
Samples Submitted: January 9, 2002
Lab Traveler: 01-038
Project: 101-034-01

NWTPH-Dx
METHOD BLANK QUALITY CONTROL

Date Extracted:	1-9-02
Date Analyzed:	1-9-02
Matrix:	Soil
Units:	mg/Kg (ppm)
Lab ID:	MB0109S1
Diesel Fuel:	ND
PQL:	25
Heavy Oil:	ND
PQL:	50
Surrogate Recovery:	
o-Terphenyl	118%

Flags:

Date of Report: January 11, 2002
Samples Submitted: January 9, 2002
Lab Traveler: 01-038
Project: 101-034-01

NWTPH-Dx
DUPLICATE QUALITY CONTROL

Date Extracted:	1-9-02
Date Analyzed:	1-10-02
Matrix:	Soil
Units:	mg/Kg (ppm)

Lab ID:	01-038-06	01-038-06 DUP
Diesel Fuel:	ND	ND
PQL:	25	25
RPD:	N/A	
Surrogate Recovery:		
o-Terphenyl	95%	90%

Flags:

Date of Report: January 11, 2002
Samples Submitted: January 9, 2002
Lab Traveler: 01-038
Project: 101-034-01

% MOISTURE

Date Analyzed: 1-9-02

Client ID	Lab ID	% Moisture
101-034-01	01-038-01	36
101-034-02	01-038-02	16
101-034-03	01-038-03	18
101-034-04	01-038-04	16
101-034-05	01-038-05	35
101-034-06	01-038-06	27
101-034-07	01-038-07	16
101-034-08	01-038-08	18
101-034-09	01-038-09	18

OnSite Environmental Inc.

DATA QUALIFIERS AND ABBREVIATIONS

A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.

B - The analyte indicated was also found in the blank sample.

C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.

D - Data from 1:____ dilution.

E - The value reported exceeds the quantitation range, and is an estimate.

F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.

G - Insufficient sample quantity for duplicate analysis.

H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.

I - Compound recovery is outside of the control limits.

J - The value reported was below the practical quantitation limit. The value is an estimate.

K - Sample duplicate RPD is outside control limits due to sample inhomogeniety. The sample was re-extracted and re-analyzed with similar results.

L - The RPD is outside of the control limits.

M - Hydrocarbons in the gasoline range (toluene-napthalene) are present in the sample.

O - Hydrocarbons outside the defined gasoline range are present in the sample; NWTPH-Dx recommended.

P - The RPD of the detected concentrations between the two columns is greater than 40.

Q - Surrogate recovery is outside of the control limits.

S - Surrogate recovery data is not available due to the necessary dilution of the sample.

T - The sample chromatogram is not similar to a typical _____.

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.

W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.

X - Sample extract treated with a silica gel cleanup procedure.

Y - Sample extract treated with an acid cleanup procedure.

Z -

ND - Not Detected at PQL
MRL - Method Reporting Limit
PQL - Practical Quantitation Limit
RPD - Relative Percent Difference

Chain of Custody

OnSite Environmental Inc.
14648 NE 95th Street • Redmond, WA 98052
Phone: (425) 883-3881 • Fax: (425) 885-4603

01-038

Turnaround Request (in working days)

(Check One)

- [ ] Same Day
- [ ] 1 Day
- [ ] 2 Day
- [ ] 3 Day
- [x] Standard (Hydrocarbon analyses: 5 days, All other analyses: 7 days)
- [ ] ______ (other)

Project Manager: [signature]

Laboratory No.

Company: White Shield

Project No.: 101-034-01

Project Name: Pace

Project Manager: Bill Gowey

Requested Analysis

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	# of Cont.	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Dx	Volatiles by 8260B	Halogenated Volatiles by 8260B	Semivolatiles by 8270C	PAHs by 8270C	PCB's by 8082	Pesticides by 8081	Herbicides by 8151A	Total RCRA Metals (8)	Priority Pollutant Metals (13)	TCLP Metals	VPH	EPH					% Moisture
1	101-034-01	1/8/02	1030	S	1			X																	X
2	101-034-02	1/8/02	1043	S	1			X																	X
3	101-034-03	1/8/02	1055	S	1			X																	X
4	101-034-04	1/8/02	1110	S	1			X																	X
5	101-034-05	1/8/02	1125	S	1			X																	X
6	101-034-06	1/8/02	1142	S	1			X																	X
7	101-034-07	1/8/02	1150	S	1			X																	X
8	101-034-08	1/8/02	1159	S	1			X																	X
9	101-034-09	1/8/02	1210	S	1			X																	X

RELINQUISHED BY	DATE	RECEIVED BY	DATE
[signature]	1/8/02	Laura Kent	1-9-02
FIRM: White Shield	TIME: 1610	FIRM: OSE	TIME: 9:40
RELINQUISHED BY	DATE	RECEIVED BY	DATE
FIRM	TIME	FIRM	TIME
REVIEWED BY		DATE REVIEWED	

COMMENTS:

Chromatographs with final report ☐

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OnSite Environmental Inc.
Analytical Testing and Mobile Laboratory Services

January 25, 2002

Bill Gowey
White Shield, Inc.
2515 W. Falls Avenue
Kennewick, WA 99336

Re: Analytical Data for Project 101-034-01
Laboratory Reference No. 0201-125

Dear Bill:

Enclosed are the analytical results and associated quality control data for samples submitted on January 23, 2002.

The standard policy of OnSite Environmental Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister
Project Manager

Enclosures

Date of Report: January 25, 2002
Samples Submitted: January 23, 2002
Lab Traveler: 01-125
Project: 101-034-01

NWTPH-Dx

Date Extracted:	1-23-02
Date Analyzed:	1-23-02
Matrix:	Soil
Units:	mg/Kg (ppm)

Client ID:	101-034-10	101-034-11	101-034-12
Lab ID:	01-125-01	01-125-02	01-125-03
Diesel Fuel:	ND	ND	ND
PQL:	30	30	30
Heavy Oil:	210	ND	ND
PQL:	60	60	60
Surrogate Recovery:			
o-Terphenyl	90%	85%	80%
Flags:	Z		

Date of Report: January 25, 2002
Samples Submitted: January 23, 2002
Lab Traveler: 01-125
Project: 101-034-01

NWTPH-Dx
METHOD BLANK QUALITY CONTROL

Date Extracted:	1-23-02
Date Analyzed:	1-23-02
Matrix:	Soil
Units:	mg/Kg (ppm)
Lab ID:	MB0123S1
Diesel Fuel:	ND
PQL:	25
Heavy Oil:	ND
PQL:	50
Surrogate Recovery:	
o-Terphenyl	81%

Flags:

Date of Report: January 25, 2002
Samples Submitted: January 23, 2002
Lab Traveler: 01-125
Project: 101-034-01

NWTPH-Dx
DUPLICATE QUALITY CONTROL

Date Extracted:	1-23-02
Date Analyzed:	1-23-02
Matrix:	Soil
Units:	mg/Kg (ppm)

Lab ID:	01-128-01	01-128-01 DUP
Diesel Fuel:	ND	ND
PQL:	25	25
RPD:	N/A	
Surrogate Recovery:		
o-Terphenyl	89%	97%

Flags:

Date of Report: January 25, 2002
Samples Submitted: January 23, 2002
Lab Traveler: 01-125
Project: 101-034-01

% MOISTURE

Date Analyzed: 1-23-02

Client ID	Lab ID	% Moisture
101-034-10	01-125-01	16
101-034-11	01-125-02	17
101-034-12	01-125-03	17

OnSite Environmental Inc.

DATA QUALIFIERS AND ABBREVIATIONS

A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.

B - The analyte indicated was also found in the blank sample.

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K - Sample duplicate RPD is outside control limits due to sample inhomogeniety. The sample was re-extracted and re-analyzed with similar results.

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M - Hydrocarbons in the gasoline range (toluene-napthalene) are present in the sample.

O - Hydrocarbons outside the defined gasoline range are present in the sample; NWTPH-Dx recommended.

P - The RPD of the detected concentrations between the two columns is greater than 40.

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S - Surrogate recovery data is not available due to the necessary dilution of the sample.

T - The sample chromatogram is not similar to a typical _____.

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V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.

W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.

X - Sample extract treated with a silica gel cleanup procedure.

Y - Sample extract treated with an acid cleanup procedure.

Z – Acid-cleaning had no effect on the sample results.

ND - Not Detected at PQL
MRL - Method Reporting Limit
PQL - Practical Quantitation Limit
RPD - Relative Percent Difference

Chain of Custody

OnSite Environmental Inc.
14648 NE 95th Street • Redmond, WA 98052
Phone: (425) 883-3881 • Fax: (425) 885-4603

Project Manager: DB

Laboratory No. 01-125

Turnaround Request (in working days)

(Check One)

- ☐ Same Day ☐ 1 Day
- ☐ 2 Day ☐ 3 Day
- ☒ Standard (Hydrocarbon analyses: 5 days, All other analyses: 7 days)
- ☐ _____ (other)

Company: White Shield

Project No.: 101-034-01

Project Name: Pace

Project Manager: Bill Gowey

Requested Analysis

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	# of Cont.	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Dx	Volatiles by 8260B	Halogenated Volatiles by 8260B	Semivolatiles by 8270C	PAHs by 8270C	PCB's by 8082	Pesticides by 8081	Herbicides by 8151A	Total RCRA Metals (8)	Priority Pollutant Metals (13)	TCLP Metals	VPH	EPH	% Moisture
1	101-034-~~01~~ 10	1/22/02	1010	S	1			X													X
2	101-034-~~01~~ 11	1/22/02	1050					X													X
3	101-034-~~01~~ 12	1/22/02	1120					X													X

RELINQUISHED BY	DATE	RECEIVED BY	DATE
Chad Rohn	1/22/02	Laura Kuit	1-23-02
FIRM White Shield	TIME 1440	FIRM OSE	TIME 9:45
RELINQUISHED BY	DATE	RECEIVED BY	DATE
FIRM	TIME	FIRM	TIME
REVIEWED BY		DATE REVIEWED	

COMMENTS:

Chromatographs with final report ☐

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APPENDIX 3

SITE ASSESSMENT REPORT FOR UNDERGROUND STORAGE TANK CLOSURE AT SANOFI BIO-INDUSTRIES WAPATO, WA JULY 1991

FILE COPY

SITE ASSESSMENT REPORT FOR UNDERGROUND STORAGE TANK CLOSURE AT SANOFI BIO-INDUSTRIES WAPATO, WA

For:

Major Petroleum Service Co.
1675 W. 36th Avenue
Kennewick, WA 99337

By:

David L. Green, R.S.A.
Engineering Geologist

WHITE SHIELD, INC.
P.O. Box 477
Grandview, WA 98930

June, 1991

WHITE SHIELD, INC.

P.O. BOX 477 • GRANDVIEW, WA 98930 • (509) 882-1144
FAX (509) 882-4566

July 17, 1991

Major Petroleum Service Co.
1675 W. 36th Avenue
Kennewick, WA 99337

Attention: Gilbert Jones

SUBJECT: SITE ASSESSMENT REPORT FOR CLOSURE OF UNDERGROUND STORAGE TANKS AT SANOFI BIO-INDUSTRIES, WAPATO, WA.

Dear Mr. Jones,

Please find two copies of the site assessment report as required by the Washington State Department of Ecology. Based on the data and findings reported herein, we found soil contaminated by diesel and bunker 6 fuel. We also found bunker 6 oil floating atop the groundwater. Upon completion of remedial activities, we found no evidence of petroleum contamination exceeding DOE cleanup guidelines remaining at the site.

The DOE requires that you retain this report for a minimum of ten years. We recommend you retain it indefinitely. The DOE also requires us to submit a copy of the Underground Storage Tank Site Check/Site Assessment Checklist and a copy of Notice of Permanent Closure of Underground Storage Tanks to the Olympia office and it is attached to this report as Appendix D and E.

We appreciate the opportunity to provide you technical assistance for your tank closure. Please call me at (509) 882-1144 should you have any questions or comments.

Respectfully Yours,
WHITE SHIELD, INC.

David L. Green, R.S.A.
Engineering Geologist

Project Number: MPS-0191

cc: lb
Sanofi Bio-Industries, Wapato, WA
U.S. Environmental Protection Agency, Olympia, WA
Department of Ecology, Olympia, WA
Department of Ecology, Central Regional Office

Sanofi Bio-Industries, Wapato, WA

Executive Summary

White Shield, Inc. (WSI) provided closure site assessment services upon removal of one 2,000 gallon diesel tank and one 10,000 bunker 6 fuel tank, located at the Sanofi Bio-Industries property Wapato, WA. We tested the soil for petroleum contamination as required by the Guidance for Site Checks and Site Assessments for Underground Storage Tanks. We conducted our initial investigation on June 14, 1991. Based on our visual observations, analytical laboratory analyses, olfactory responses (smell), and interviews, we found petroleum contamination exceeding DOE cleanup guidelines at the site. The soil under the diesel tank was contaminated with diesel and the soil adjacent to the bunker fuel was contaminated with bunker fuel. We also found bunker fuel contaminated soil adjacent to fuel lines. We encountered bunker fuel floating atop the groundwater under the bunker fuel tank.

Upon confirming that petroleum concentrations exceeded Action Levels for Petroleum Releases (Action Levels), we initiated cleanup at the site by excavating petroleum contaminated soil. We also used absorbent pads to remove bunker fuel from the surface of the groundwater.

Cleanup of petroleum contaminated soil and groundwater was verified by analytical laboratory results. We find no remaining petroleum contamination in the soil or groundwater which exceeds Action Levels.

The petroleum contaminated soil was transported to property owned by Sanofi Bio-Industries for treatment (landfarming).

TABLE OF CONTENTS

1.1 Purpose

This report describes findings and actions taken for work associated with the Underground Storage Tank removal(s). The work and investigation responds to regulatory requirements set forth by the United States Environmental Protection Agency (EPA) and the State of Washington, Department of Ecology (DOE).

1.2 Scope of Work

This report completes site assessment services, provided by White Shield, Inc. (WSI), for one 2,000 gallon diesel tank and one 10,000 gallon bunker 6 fuel tank on the Sanofi Bio-Industries property, Wapato, WA. Major Petroleum Service Co. provided the decommissioning services. Upon confirmation that petroleum concentrations exceeded Action Levels, we were retained to provide technical direction for PCS removal.

2.0 Background Information

2.1 Site Location

The site is located at 5661 Branch Road, Wapato, Washington. It is located within the NE 1/4 of the NW 1/4 of Section 31, Township 11 North, Range 19 East, Willamette Meridian.

2.2 Site Description and History

We understand that these tanks formerly supported refueling of railroad locomotives. Concrete floors and foundations are the only remains of railroad buildings at the site. The year of tank installation is not known. The tanks were removed on June 13, 1991.

2.3 Soils Description

Our inspection of the soil found poorly sorted Yakima River gravels up to 6 inches in diameter.

3.0 Field Activities

3.1 General Investigative Methods

We visually inspected each tank, the soil and the fill. We also used field screening, analytical laboratory analyses, olfactory responses (smell), and interviews for data. The methods and general conclusions are discussed below.

3.2 Tank Inspection

We removed attached soil and scale to completely expose the tanks. With the soil and scale removed, we carefully examined each tank. The steel tanks exhibited moderate corrosion and pitting. We observed a small pin-hole at the base of the diesel tank.

3.3 Site Assessment

Dave Green, engineering geologist, and Rodney Heit, environmental technician performed the closure site assessment on June 14, 1991 after removal of the tanks. Both are registered with the Washington State Department of Ecology Underground Storage Tank Program. The attached Field Form for Site Assessment of Underground Storage Tanks (Field Form) provides a site map and other key data.

We observed visual signs of contamination in the soil and groundwater adjacent to the bunker 6 fuel tank and a portion of the fuel lines. We also observed slight diesel odors in the diesel tank excavation. We submitted 15 samples to Materials Testing and Consulting, Mt. Vernon, Washington, for laboratory analysis and found that petroleum hydrocarbon concentrations exceeded Action Levels in the area of the bunker fuel tank, a portion of the fuel lines and under the diesel tank. The sample locations are shown on the Field Form and the analysis results are shown in Appendix B. As required by the DOE, we have completed the Underground Storage Tank Site Check/Site Assessment Checklist and the "Notice of Permanent Closure of Underground Storage Tank(s) and submitted them to the Olympia office. These are presented in this report as Appendix D and E, respectively.

4.0 Investigative Methods and Results

4.1 Field Screening

For field analysis of compounds containing volatile organics, we used a Foxboro Organic Vapor Analyzer in conjunction with the interim headspace method as recommended by the manufacturer. This method is used to confirm the presence or absence of volatile components in the soil and provides only a rough indication of the contaminant concentrations. The analysis procedure involves:

1. Selecting a clean, wide mouth jar (1 qt.) and filling the bottom 1/3 with a discrete soil sample.

2. Place aluminum foil over the top of the jar and place a ring over the jar to create a seal.

3. Boil the sample for 10 minutes. This causes the volatile compounds to become vapors and collect in the space above the soil.

4. Remove the sample from the boiling water and insert the instrument probe through the aluminum foil for vapor analysis.

5. Record the instrument response on the Field Form.

For field analysis of semi-volatile (diesel) and non-volatile compounds (bunker fuel), we use Thin Layer Chromatography (TLC) for qualitative and quantitative analysis. This analytical technique utilizes the principle of chromatography to separate individual components for comparison to known standards.

TLC is classified as a solid-liquid chromatographic system, meaning there are two phases through which an extract of the sample is passed; a solid phase (silica gel) and a liquid phase (a solvent such as hexane).

The solid phase is stationary and is coated on a glass plate. During the chromatography process, the liquid phase carries the sample through the solid phase. The solvent moves at a fairly constant rate through the solid phase. However, the compound in the sample (analyte) are partitioned by a relative attractiveness of the analyte between the solid phase and the liquid phase. Analytes strongly attracted to the silica will remain on the silica longer and move more slowly than analytes that are not as strongly attracted to the silica. When the chromatography is stopped, the distance the analyte has moved relative

to the distance the solvent has moved is used to identify the compound. When the plate is viewed under ultraviolet light, the analytes can be seen and compared to standards of known concentration for quantitative analysis.

4.2 Soil Sampling

The Field Form (Appendix A) presents the location, quantity and types of samples taken. In general, sample collection and control followed the following protocol:

1. Select a laboratory certified clean sample jar for sample collection.

2. Using clean latex gloves and clean sampling utensils (tri-sodium phosphate, chlorine solution, tap water rinse and distilled water rinse cycle) tightly pack the soil sample in the sample jar (4 oz.) to the top of the jar to prevent any airspace.

3. Label the jar with the soil sample number, the type of laboratory test required, the date, name of site and sampler. The sample is then entered on the chain of custody form.

4. Cool the sample in wet ice to approximately 4 degrees centigrade.

5. Repack the samples for shipment to the laboratory in blue ice and a cooler.

6. Relinquish sample to courier for shipment to the laboratory.

4.3 Soil Chemistry

Laboratory analysis of soil samples collected from the floor of the diesel tank excavation found:

- diesel in concentrations up to 38.0 parts per million (ppm) and
- xylenes in concentrations up to 0.294 ppm.

Laboratory analysis of soil samples in the bunker fuel tank excavation found:

- Total Recoverable Petroleum Hydrocarbons (TPH) in concentrations up to 21,463 ppm.

Laboratory analysis of soil samples collected under fuel lines found:

- TPH in concentrations up to 2,090 ppm.

Results of the analyses are shown in Appendix B. Comparison of the analyses results with Action Levels for Petroleum Releases (Appendix C) cleanup guidelines indicates that no cleanup action is required.

4.4 Groundwater Sampling

Water sampling followed the same general protocol as the soil samples. The difference lies in filling the sample bottle. We filled the water bottle and placed the cap on the sample underwater to ensure the absence of air space.

4.5 Groundwater Chemistry

Laboratory analysis of groundwater samples collected from under the diesel tank and the bunker fuel tank detected no petroleum hydrocarbons. Results of the analyses are shown in Appendix B. Comparison of the analyses results with the Action Levels (Appendix C) indicates that no additional cleanup action is required.

5.0 Remedial Action

Upon confirmation that petroleum concentrations exceeded Action Levels (described above), we initiated cleanup of the soil and groundwater. Debbie Chulos, environmental technician, monitored the excavation process through use of Thin Layer Chromatography (TLC). Miss Chulos is registered with the Washington State Department of Ecology's Underground Storage Tank Program.

Mr. Jones used petroleum absorbent pads to remove bunker fuel that was floating on the surface of the groundwater in the bunker fuel tank excavation. As discussed above, laboratory analysis detected no dissolved petroleum products in the groundwater. PCS adjacent to fuel lines and from within the diesel tank excavation was also excavated. Mr. Jones excavated PCS from these locations until field analyses indicated that excavation of PCS was complete.

When field analysis indicated that excavation of Petroleum Contaminated Soil (PCS) was complete, we collected soil samples for laboratory analysis to confirm that petroleum concentrations do not exceed Action Levels. The analyses found no remaining petroleum contaminants exceeding action levels.

The excavated PCS was transported to a treatment site on the Sanofi Bio-Industries property. The client chose to "landfarm" the PCS to lower petroleum concentrations to acceptable levels. The treatment site is located approximately 600 feet North of Branch Road and 1000 feet West of Lateral B. It is located within the SW 1/4 of the SW 1/4 of Section 25, Township 11 North, Range 18 East, Willamette Meridian.

6.0 Conclusion

Our investigation found petroleum contamination exceeding DOE cleanup guidelines at the site. We removed bunker fuel floating atop the groundwater and directed excavation of PCS. Laboratory analysis on samples collected after the cleanup process found no petroleum concentrations exceeding Action Levels.

Excavated PCS was transported to a site owned by Sanofi Bio-Industries for treatment.

7.0 Recommendations

For treatment of the petroleum contaminated soil, we recommend following these guidelines:

- spread the soil to a maximum thickness of 3 inches,
- protect the soil from surface water runoff,
- ensure that depth to groundwater at the site is greater than 10 feet,
- restrict public access to the site,
- till the soil on a monthly basis.

Since the majority of petroleum contamination consists of bunker 6 fuel oil, the treatment process may be relatively slow. This is due to the non-volatile nature of the oil. To accelerate the treatment process, we recommend fertilizing the soil with manure. The manure should be tilled into the soil. The manure/soil ratio should not exceed 50:50. Manure is an excellent fertilizer for this purpose as it adds nutrients and micro-organisms for biologic metabolism of the petroleum.

8.0 Limitations

In performing our professional services, we used a degree of care ordinarily exercised under similar circumstances by members of our profession. No warranty, expressed or implied, is made or intended. Our conclusions and recommendations, developed from our field and laboratory investigation reported herein, are based upon this firm's understanding of the tank removal project and are in concurrence with generally accepted practice.

WHITE SHIELD, INC.

P.O. BOX 477
GRANDVIEW, WA
98930
(509) 882-1144

FIELD FORM FOR SITE ASSESSMENT OF UNDERGROUND STORAGE TANKS

Project name: Sanofi Bio Industries Project number: MPS-0191

Location: Branch Rd. ; NE 1/4 NW 1/4, Sec. 31, T. 11 N., R. 19 E., W.M.

Field Personnel: Dave Green/Rod Heit Weather: Sunny, partly cloudy Date: 6/14/91

Tank Contents: Diesel Size: 2,000 gal. Condition: Pinhole in base of tank.

Tank Contents: Bunker C Size: 10,000 gal Condition: good, signs of overfill

Tank Contents: _____ Size: _____ Condition: _____

Tank Contents: _____ Size: _____ Condition: _____

Tank Contents: _____ Size: _____ Condition: _____

Ambient vapors: 20 Vapors in excavation: slight Odors: Bunker C & diesel

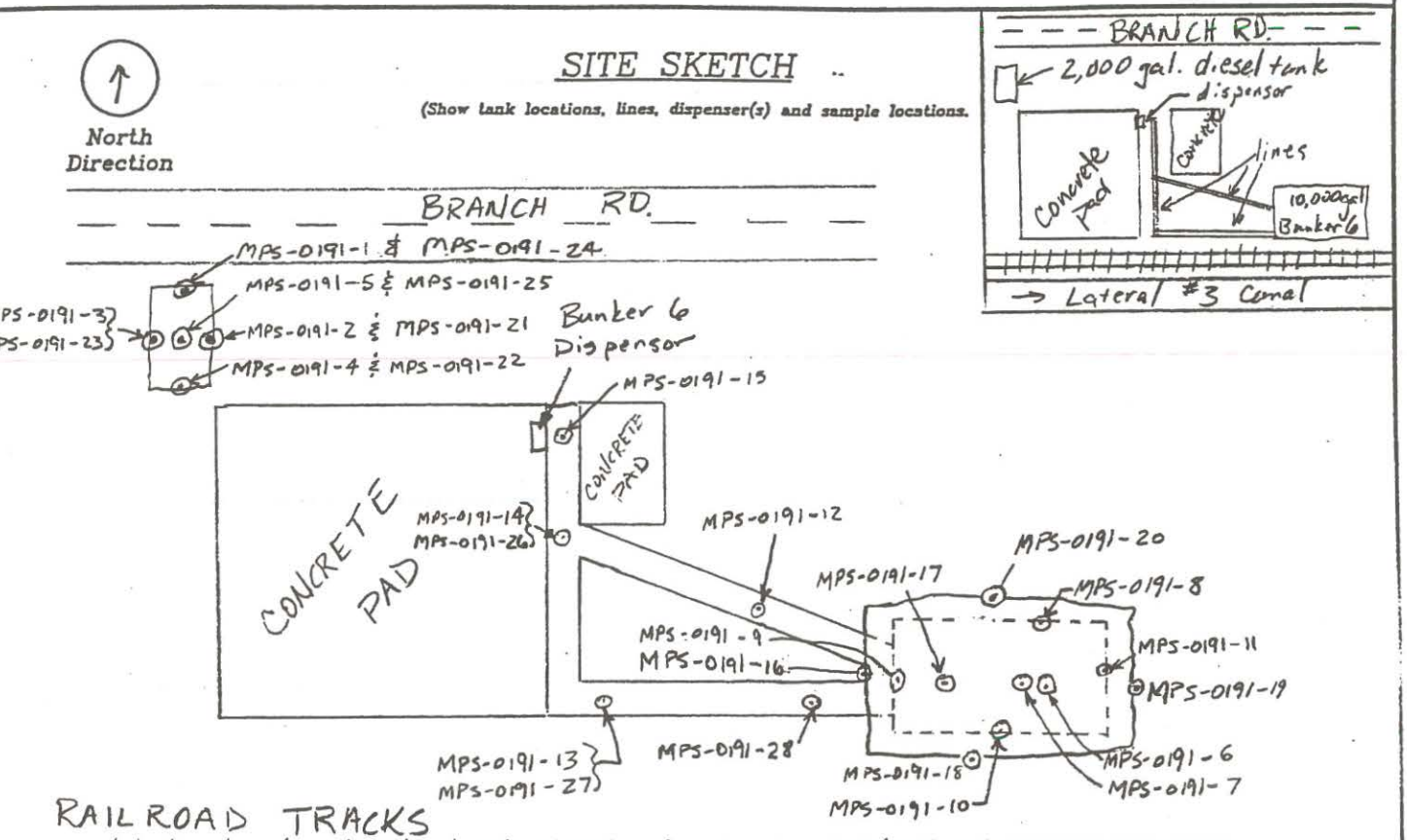
Soil texture and structures: Poorly sorted Yakima River Gravels up to 6" in diameter

Visual contamination: Fuel lines & Bunker tank excavation Screening method: FID & TLC

SITE SKETCH

(Show tank locations, lines, dispenser(s) and sample locations.

North Direction



Compilation of Sampling

Samples descriptions are on reverse.

Depth to groundwater 9'

Approximate scale: Not to Scale

I certify that the work performed and sampling methods used meet regulatory requirements as set forth by the U.S. Environmental Protection Agency and the Washington State Department of Ecology.

Site Assessor: David Green Date: 7/18/91

ADDITIONAL SAMPLING

(23) West wall, diesel tank after cleanup
Analysis: 8015 Depth: 9'.
Headspace reading ________ ppm.

(24) North wall, diesel tank after cleanup
Analysis: 8015 Depth: 9'.
Headspace reading ________ ppm.

(25) Ground water, diesel tank excavation
Analysis: 8015 Depth: 10'.
Headspace reading ________ ppm.

(26) Fuel lines after cleanup
Analysis: 418.1 Depth: 3'.
Headspace reading ________ ppm.

(27) Fuel lines after cleanup
Analysis: 418.1 Depth: 3'.
Headspace reading ________ ppm.

(28) Fuel lines after cleanup
Analysis: 418.1 Depth: 3'.
Headspace reading ________ ppm.

○ ________________________.
Analysis: ________ Depth: ________.
Headspace reading ________ ppm.

○ ________________________.
Analysis: ________ Depth: ________.
Headspace reading ________ ppm.

○ ________________________.
Analysis: ________ Depth: ________.
Headspace reading ________ ppm.

○ ________________________.
Analysis: ________ Depth: ________.
Headspace reading ________ ppm.

○ ________________________.
Analysis: ________ Depth: ________.
Headspace reading ________ ppm.

○ ________________________.
Analysis: ________ Depth: ________.
Headspace reading ________ ppm.

○ ________________________.
Analysis: ________ Depth: ________.
Headspace reading ________ ppm.

○ ________________________.
Analysis: ________ Depth: ________.
Headspace reading ________ ppm.

○ ________________________.
Analysis: ________ Depth: ________.
Headspace reading ________ ppm.

○ ________________________.
Analysis: ________ Depth: ________.
Headspace reading ________ ppm.

○ ________________________.
Analysis: ________ Depth: ________.
Headspace reading ________ ppm.

○ ________________________.
Analysis: ________ Depth: ________.
Headspace reading ________ ppm.

○ ________________________.
Analysis: ________ Depth: ________.
Headspace reading ________ ppm.

○ ________________________.
Analysis: ________ Depth: ________.
Headspace reading ________ ppm.

○ ________________________.
Analysis: ________ Depth: ________.
Headspace reading ________ ppm.

○ ________________________.
Analysis: ________ Depth: ________.
Headspace reading ________ ppm.

○ ________________________.
Analysis: ________ Depth: ________.
Headspace reading ________ ppm.

○ ________________________.
Analysis: ________ Depth: ________.
Headspace reading ________ ppm.

MTC *Analytical/Environmental Services*

Materials Testing & Consulting, Inc
P.O. Box 309
Mount Vernon, WA 98273
WSDOH Laboratory #46092090
(206)424-7560 - FAX (206)424-7550

31
Client: White Shield Inc.
P.O. Box 477
Grandview , WA 98930

Date: 7/16/91
Reference: 91-0268

Attn: Ms. Debbie Chulos

Project: Sanofi Bio Ind

Data Report

Lab Number	Sample Description	ug/gm TPH	ng/gm Benzene	Toluene	Ethylbenzene	Xylenes
31-91-00783.0S	Composite of MPS-0191-1 and 2	38-D	<10	<10	<10	294
31-91-00784.0S	Composite of MPS-0191-3 and 4	<0.10	<10	<10	<10	<10
31-91-00786.0W	MPS-0191-6	<0.01	<1	<1	<1	<1
	* - Sample # 5 was broken upon receipt					
	Methods:					
	BTEX/TPH SW846 8020/8015mod.					
	G- Gasoline D-Diesel	Soil/Water	Soil/Water	Soil/Water	Soil/Water	Soil/Water
	Method Reporting Limit (MRL)	0.05/0.01	5/1	5/1	5/1	5/1
	Maximum Contamination Levels	100/1	500/5	20000/20	40000/40	20000/20

Kurt W. Larsen
Sr. Enviromental Chemist

MTC *Analytical/Environmental Services*

Materials Testing & Consulting, Inc
P.O. Box 309
Mount Vernon, WA 98273
WSDOH Laboratory #46092090
(206)424-7560 - FAX (206)424-7550

31
Client: White Shield Inc.
P.O. Box 477
Grandview , WA 98930

Date: 7/15/91
Reference: 91-0268

Attn: Mr. Dave Green

Project: Sanofi Bio

Data Report

Lab Number	Sample Description	ug/gm	ng/gm			
		TPH	Benzene	Toluene	Ethlybenzene	Xylenes
31-91-00786.0W	MPS-0191-6	<5	-	-	-	-
31-91-00787.0S	MPS-0191-7	6839	-	-	-	-
31-91-00788.0S	MPS-0191-8	71	-	-	-	-
31-91-00789.0S	MPS-0191-9	316	-	-	-	-
31-91-00790.0S	MPS-0191-10	35	-	-	-	-
31-91-00791.0S	MPS-0191-11	21463	-	-	-	-
31-91-00792.0S	MPS-0191-12	53	-	-	-	-
31-91-00793.0S	MPS-0191-13	661	-	-	-	-
31-91-00794.0S	MPS-0191-14	2090	-	-	-	-
31-91-00795.0S	MPS-0191-15	13	-	-	-	-
	Methods: TPH 418.1					
		Soil/Water	Soil/Water	Soil/Water	Soil/Water	Soil/Water
	Method Reporting Limit (MRL)	25/0.1	5/1	5/1	5/1	5/1
	Maximum Contamination Levels	200/1	500/5	20000/20	40000/40	20000/20

Larry J Henderson by Kwitz

L.J. Henderson, PhD
Lab Director

MTC *Analytical/Environmental Services*

Materials Testing & Consulting, Inc
P.O. Box 309
Mount Vernon, WA 98273
WSDOH Laboratory #46092090
(206)424-7560 - FAX (206)424-7550

31
Client: White Shield Inc.
P.O. Box 477
Grandview, WA 98930

Date: 7/15/91
Reference: 91-0269

Attn: Ms. Debbie Chulos

Project: Sanofi Bio Ind.

Data Report

Lab Number	Sample Description	ug/gm TPH	ng/gm Benzene	Toluene	Ethlybenzene	Xylenes
31-91-00796.0S	MPS-0191-16	88				
31-91-00797.0S	MPS-0191-18	171				
31-91-00798.0S	MPS-0191-19	<25				
31-91-00799.0S	MPS-0191-20	157				
	Methods: EPA 418.1					
		Soil/Water	Soil/Water	Soil/Water	Soil/Water	Soil/Water
	Method Reporting Limit (MRL)	25/5.0	5/1	5/1	5/1	5/1
	Maximum Contamination Levels	200/1	500/5	20000/20	40000/40	20000/20

Larry J. Henderson
Lab Director

APPENDIX B

MTC *Analytical/Environmental Services*

Materials Testing & Consulting, Inc
P.O. Box 309
Mount Vernon, WA 98273
WSDOH Laboratory #46092090
(206)424-7560 - FAX (206)424-7550

12
Client: White Shield Inc.
P.O. Box 477
Grandview , WA 98930

Date: 6/26/91
Reference: 91-0228

Attn: Mr. Dave Green

Project: Sanofi Bio

Data Report

Lab Number	Sample Description	ug/gm TPH	ng/gm Benzene	Toluene	Ethlybenzene	Xylenes
31-91-00696.OS	MPS-0191-21	<5	<25	<25	<25	<25
31-91-00697.OS	MPS-0191-22	<5	<25	<25	<25	<25
31-91-00698.OS	MPS-0191-23	<5	<25	<25	<25	<25
31-91-00699.OS	MPS-0191-24	<5	<25	<25	<25	<25
31-91-00700.OW	MPS-0191-25	<0.1	<1	<1	<1	<1
	Methods: BTEX/TPH SW846 8020/8015mod.					
	G- Gasoline D-Diesel	Soil/Water	Soil/Water	Soil/Water	Soil/Water	Soil/Water
	Method Reporting Limit (MRL)	0.05/0.1	5/1	5/1	5/1	5/1
	Maximum Contamination Levels	100/1	500/5	20000/20	40000/40	20000/20

Kurt W. Larsen
Sr. Enviromental Chemist

MTC *Analytical/Environmental Services*

Materials Testing & Consulting, Inc
P.O. Box 309
Mount Vernon, WA 98273
WSDOH Laboratory #46092090
(206)424-7560 - FAX (206)424-7550

31
Client: White Shield Inc.
P.O. Box 477
Grandview , WA 98930

Date: 7/15/91
Reference: 91-0297

Attn: Ms. Debbie Chulos

Project: Sanofi Bio Ind

Data Report

Lab Number	Sample Description	ug/gm TPH	ng/gm Benzene	Toluene	Ethlybenzene	Xylenes
31-91-00965.0S	MPS-0191-26	89				
31-91-00966.0S	MPS-0191-27	30				
31-91-00967.0S	MPS-0191-28	<25				
	Methods: EPA 418.1					
		Soil/Water	Soil/Water	Soil/Water	Soil/Water	Soil/Water
	Method Reporting Limit (MRL)	25/5.0	5/1	5/1	5/1	5/1
	Maximum Contamination Levels	200/1	500/5	20000/20	40000/40	20000/20

Larry J. Henderson by Kirk Larson
Larry J. Henderson
Lab Director

APPENDIX B

WHITE SHIELD INC.
P. O. BOX 477
GRANDVIEW, WA. 98930
(509) 882-1144
(509) 882-4566 FAX

CHAIN OF CUSTODY

PROJECT NAME SANOP BIO INDUSTRIES
PROJECT # MPS-0191
DESTINATION MTC
SAMPLER D Green
DATE 6-14-91 TIME

SAMPLE NUMBER	ANALYSIS REQUESTED: BOD5	418.1	
MPS-0191-1	X		
MPS-0191-2			
MPS-0191-3	X		
MPS-0191-4			
MPS-0191-5	X		
MPS-0191-6		X Broken - same as Sample #5	
MPS-0191-7		X	
MPS-0191-8		X	
MPS-0191-9		X	
MPS-0191-10		X	
MPS-0191-11		X	
MPS-0191-12		X	
MPS-0191-13		X	
MPS-0191-14		X	
MPS-0191-15		X	

composite samples

PLEASE COMPOSITE SAMPLES MPS-0191-1 and MPS-0191-2

PLEASE COMPOSITE SAMPLES MPS-0191-4 and MPS-0191-3

19 Samples 6-15 - Bunker #6

RELINQUISHED BY (SIGN)	RELINQUISHED BY (SIGN)	RELINQUISHED BY (SIGN)	RELINQUISHED BY (SIGN)
1.	2.	3.	4.
DATE 6/17/91 TIME 3:30	DATE TIME	DATE 6/17 TIME 6:45	DATE 6-17 TIME 8:30p
RECEIVED BY (SIGN)	RECEIVED BY (SIGN)	RECEIVED BY (SIGN)	RECEIVED BY (SIGN)
1.	2.	3.	4.
DATE 6-17-91 TIME 3:30	DATE TIME	DATE 6-17 TIME 6:45	DATE 6-17-91 TIME 20X
METHOD OF SHIPMENT HAND CARRIED	SHIPPED BY (SIGN) HAND CARRIED	RECEIVED FOR LABORATORY (SIGN)	DATE 6/18 TIME 10:02a

JCN 91-B-0268

WHITE SHIELD INC.
P. O. BOX 477
GRANDVIEW, WA. 98930
(509) 882-1144
(509) 882-4566 FAX

CHAIN OF CUSTODY

PROJECT NAME Sawgit Ind Industries
PROJECT # MPS-Z5197
DESTINATION MTC
SAMPLER D Chulos
DATE 6-18-91 TIME 7:0am

SAMPLE NUMBER	ANALYSIS REQUESTED 418.1												
MPS-0191-16	X												
MPS-0191-17	X	CANCEL PER D. CHULOS											
MPS-0191-18	X												
MPS-0191-19	X												
MPS-0191-20	X												

RELINQUISHED BY (SIGN)	RELINQUISHED BY (SIGN)	RELINQUISHED BY (SIGN)	RELINQUISHED BY (SIGN)
1. D Chulos	2. [signature]	3. [signature]	4.
DATE 6/18/91 TIME 5:45	DATE 6/18 TIME [illegible]	DATE 6/18 TIME 8:30p	DATE TIME
RECEIVED BY (SIGN)	RECEIVED BY (SIGN)	RECEIVED BY (SIGN)	RECEIVED BY (SIGN)
1. [signature]	2. [signature]	3.	4.
DATE 6/18 TIME [illegible]	DATE 6/18 TIME 6:45p	DATE TIME	DATE TIME
METHOD OF SHIPMENT	SHIPPED BY (SIGN)	RECEIVED FOR LABORATORY (SIGN)	DATE TIME
Carrier	[signature]		

JCN 91-0269

WHITE SHIELD INC.
P. O. BOX 477
GRANDVIEW, WA. 98930
(509) 882-1144
(509) 882-4566 FAX

CHAIN OF CUSTODY

PROJECT NAME SANOFI BIO INDUSTRIES
PROJECT # MPS-0191
DESTINATION MJC
SAMPLER Dale Edwards
DATE 6-21-91 TIME 10 A.M.

SAMPLE NUMBER	ANALYSIS REQUESTED 8015
MPS-0191-21	X
MPS-0191-22	PLEASE COMPOSITE THESE FOUR SOIL SAMPLES
MPS-0191-23	
MPS-0191-24	
MPS-0191-25	X

RELINQUISHED BY (SIGN)	RELINQUISHED BY (SIGN)	RELINQUISHED BY (SIGN)	RELINQUISHED BY (SIGN)
1. D. Edwards	2.	3.	4.
DATE 6-21-91 TIME 535	DATE ____ TIME ____	DATE 6.21 TIME 9:15p	DATE ____ TIME ____
RECEIVED BY (SIGN)	RECEIVED BY (SIGN)	RECEIVED BY (SIGN)	RECEIVED BY (SIGN)
1.	2.	3.	4.
DATE 6/21/91 TIME 5:35	DATE 6.21 TIME 7:30p	DATE ____ TIME ____	DATE ____ TIME ____
METHOD OF SHIPMENT HAND CARRIED	SHIPPED BY (SIGN)	RECEIVED FOR LABORATORY (SIGN)	DATE 6/24/91 TIME 8:15

91-0228

WHITE SHIELD INC. P. O. BOX 477 GRANDVIEW, WA. 98930 (509) 882-1144 (509) 882-4566 FAX	CHAIN OF CUSTODY	PROJECT NAME Sandoz Bio Industries PROJECT # MPS 0191 DESTINATION MPC SAMPLER Don Douglas DATE 7-2-91 TIME 2:00 pm

SAMPLE NUMBER	ANALYSIS REQUESTED															
	418.1															
MPS:0191:26	X															
MPS:0191:27	X															
MPS:0191:28	X															

RELINQUISHED BY (SIGN)	RELINQUISHED BY (SIGN)	RELINQUISHED BY (SIGN)	RELINQUISHED BY (SIGN)
1. D Douglas	2. [signature]	3.	4.
DATE 7-2-91 TIME 6:15	DATE 7/2/91 TIME 6:15	DATE TIME	DATE TIME
RECEIVED BY (SIGN)	RECEIVED BY (SIGN)	RECEIVED BY (SIGN)	RECEIVED BY (SIGN)
[signature]	2.	3.	4.
DATE 7/2/91 TIME 6:15	DATE TIME	DATE TIME	DATE TIME
METHOD OF SHIPMENT	SHIPPED BY (SIGN)	RECEIVED FOR LABORATORY (SIGN)	DATE 7/02 TIME 9:30a
Hand	[signature]	[signature]	91-0297

APPENDIX C

Action Levels for Petroleum Releases

Indicator Constituent	CAS Number[1]	Groundwater Action Level	Soil Action Level
Benzene	71-43-2	1 µg/L[2,4]	0.5 mg/kg[3]
Ethylbenzene	100-41-4	30 µg/L	20 mg/kg
Toluene	108-88-3	40 µg/L	40 mg/kg
Xylene	1330-20-7	20 µg/L	20 mg/kg
TPH (gasoline)	—	1,000 µg/L	100 mg/kg
TPH (other than gasoline)	—	1,000 µg/L	200 mg/kg
Lead	7439-92-1	5.0 µg/L	250 mg/kg

1 CAS number is the Chemical Abstracting Service number; "—" means no CAS number has been defined for these constituents.
2 µg/L can also be expressed as ppb.
3 mg/kg can also be expressed as ppm.
4 Groundwater quality based criteria (Chapter 173-200 WAC).

APPENDIX D

UNDERGROUND STORAGE TANK
Site Check/Site Assessment Checklist

The purpose of this form is to certify the proper investigation of an UST site for the presence of a release. These activities shall be conducted in accordance with Chapter 173.360 WAC. A description of the various situations requiring a site check or site assessment is provided in the guidance document for UST site checks and site assessments.

This Site Check/Site Assessment Checklist shall be completed and signed by a person registered with the Department of Ecology to perform site assessments.

Two copies of the results of the site check or site assessment should be included with this checklist according to the reporting requirements in the guidance document for UST site checks and site assessments.

For further information about completing this form, please contact the Department of Ecology UST Program.

The completed checklist should be mailed to the following address:

Underground Storage Tank Section
Department of Ecology
Mail Stop PV-11
Olympia, WA 98504-8711

1. UST SYSTEM OWNER AND LOCATION

UST Owner/Operator: SANOFI BIO-INDUSTRIES

Owners Address: 5661 BRANCH RD (Street) (P.O. Box)

WAPATO (City) WA (State) 98951 (ZIP-Code)

Telephone: (509) 877-6111

Site ID Number (on invoice or available from Ecology if tank is registered): not registered

Site/Business Name: SAME AS ABOVE

Site Address: (Street) (County)

(City) (State) (ZIP-Code)

2. SITE CHECK/SITE ASSESSMENT CONDUCTED BY:

Registered Person: Debbie Chiles

Address: 246 Division (Street) PO Box 477 (P.O. Box)

Grandview (City) Washington (State) 98930 (ZIP-Code)

Telephone: (509) 882-1144

3. TANK INFORMATION

1. Tank ID Number (as registered with Ecology): not registered
2. Year installed: unknown
3. Tank capacity in gallons: 2000
4. Last substance stored: diesel

4. REASON FOR CONDUCTING SITE CHECK/SITE ASSESSMENT

Check one:

_____ Investigate suspected release due to on-site environmental contamination

_____ Investigate suspected release due to off-site environmental contamination

_____ Extend temporary closure of UST system for more than 12 months

_____ UST system undergoing change-in-service

_____ UST system permanently closed-in-place

✓ UST system permanently closed with tank removed

_____ Required by Ecology or delegated agency for UST system closed before December 22, 1988

_____ Other (describe): _____

5. CHECKLIST

Each item of the following checklist shall be initialed by the person registered with the Department of Ecology whose signature appears below.

	Yes	No
1. Has the site check/site assessment been conducted according to applicable procedures specified in the UST site check/site assessment guidance issued by the Department of Ecology?	DC	
2. Has a release from the UST system been confirmed? *NOTE: Owners/operators must report all confirmed releases to the Department of Ecology or delegated agency within 24 hours.*	DC	
3. Are the results of the site check/site assessment enclosed with this checklist? *NOTE: Two copies of the site check/site assessment results must be submitted to the Department of Ecology according to the reporting requirements specified in the UST site check/site assessment guidance.*	DC	

I hereby certify that I have been in responsible charge of performing the site check/site assessment described above. Persons submitting false information are subject to penalties under Chapter 173.360 WAC.

6-18-91
Date

Donna Chubbs
Signature of Person Registered with Ecology

6. OWNER'S SIGNATURE

6-18-91
Date

Mark R. Ayers
Signature of Tank Owner or Authorized Representative

UNDERGROUND STORAGE TANK
Site Check/Site Assessment Checklist

The purpose of this form is to certify the proper investigation of an UST site for the presence of a release. These activities shall be conducted in accordance with Chapter 173.360 WAC. A description of the various situations requiring a site check or site assessment is provided in the guidance document for UST site checks and site assessments.

This Site Check/Site Assessment Checklist shall be completed and signed by a person registered with the Department of Ecology to perform site assessments.

Two copies of the results of the site check or site assessment should be included with this checklist according to the reporting requirements in the guidance document for UST site checks and site assessments.

For further information about completing this form, please contact the Department of Ecology UST Program.

The completed checklist should be mailed to the following address:

Underground Storage Tank Section
Department of Ecology
Mail Stop PV-11
Olympia, WA 98504-8711

1. UST SYSTEM OWNER AND LOCATION

UST Owner/Operator: SANOFI BIO-INDUSTRIES

Owners Address: 5661 BRANCH RD (Street) P.O. Box

WAPATO (City) WA (State) 98951 (ZIP-Code)

Telephone: (509) 877-6111

Site ID Number (on invoice or available from Ecology if tank is registered): not registered

Site/Business Name: SAME AS ABOVE

Site Address: (Street) (County)

(City) (State) (ZIP-Code)

2. SITE CHECK/SITE ASSESSMENT CONDUCTED BY:

Registered Person: Debbie Chulos

Address: 246 Division (Street) PO Box 477 (P.O. Box)

Grandview (City) Washington (State) 98930 (ZIP-Code)

Telephone: (509) 882-1144

3. TANK INFORMATION

1. Tank ID Number (as registered with Ecology): not registered
2. Year installed: unknown
3. Tank capacity in gallons: 10,000
4. Last substance stored: Bunker #6

4. REASON FOR CONDUCTING SITE CHECK/SITE ASSESSMENT

Check one:

_____ Investigate suspected release due to on-site environmental contamination
_____ Investigate suspected release due to off-site environmental contamination
_____ Extend temporary closure of UST system for more than 12 months
_____ UST system undergoing change-in-service
_____ UST system permanently closed-in-place
__✓__ UST system permanently closed with tank removed
_____ Required by Ecology or delegated agency for UST system closed before December 22, 1988
_____ Other (describe): _____

5. CHECKLIST

Each item of the following checklist shall be initialed by the person registered with the Department of Ecology whose signature appears below.

	Yes	No
1. Has the site check/site assessment been conducted according to applicable procedures specified in the UST site check/site assessment guidance issued by the Department of Ecology?	DC	
2. Has a release from the UST system been confirmed? *NOTE: Owners/operators must report all confirmed releases to the Department of Ecology or delegated agency within 24 hours.*	DC	
3. Are the results of the site check/site assessment enclosed with this checklist? *NOTE: Two copies of the site check/site assessment results must be submitted to the Department of Ecology according to the reporting requirements specified in the UST site check/site assessment guidance.*	DC	

I hereby certify that I have been in responsible charge of performing the site check/site assessment described above. Persons submitting false information are subject to penalties under Chapter 173.360 WAC.

6-18-91
Date

Debbie Charles
Signature of Person Registered with Ecology

6. OWNER'S SIGNATURE

6-18-91
Date

Mark R Glaze
Signature of Tank Owner or Authorized Representative

APPENDIX E

NOTICE OF PERMANENT CLOSURE OF UNDERGROUND STORAGE TANK(S)

Site Owner/Operator: Sanofi Bio-Industries
Site Address: 5661 Branch Rd.
Telephone: (509) 877-6111

Site Notification Number (If known; this is assigned by Ecology): —
Tank has been registered with Ecology (__); tank was not registered (X).

Local closure permit (if any) obtained from: None
(Always contact local authorities regarding permit requirements.)

Tank closure performed by:
Company/Individual: Major Petroleum Service Co./Gilbert Jones
Telephone: (509) 586-1861 Date of Tank Closure: June 13, 1991
Method of Closure: (X) Removal (__) In-Place Closure
If closed in place, type of fill material used: _____

If removed, how will the tank(s) be disposed of? (__) Scrap (__) Landfill
(X) Other method (please specify: Unknown
Disposal Location: _____

Tank(s) Closed

Tank ID Number	Age	Size	Last Material Stored
1	?	2,000 gal	Diesel
2	?	10,000 gal	Bunker C

Will the tanks be replaced by new underground tanks? (__) Yes (X) No
(NOTE: If YES, you need to submit a notification form for the new tanks.)

Was a site assessment completed? (X) Yes (__) No If so, was contamination found? (X) Yes (__) No

(NOTE: The appropriate regional office of the Washington Department of Ecology should be contacted for assistance if contamination is found (see attached map). Records of the site closure must also be maintained at the site and must be available upon an inspector's request for at least three years after closure.)

Inspecting Agency: None Inspector Name: None
(NOTE: This is generally the local fire department or agency enforcing the Uniform Fire Code; in some cases (usually involving contamination) it may be Ecology. In some instances there may be no inspecting agency.)

Signature: David Green Date: July 18, 1991
Title: Engineering Geologist

Please return the completed form to:

Storage Tank Unit
Department of Ecology
M/S PV-11
Olympia, WA 98504-8711